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Responsive to 27 June 2005 Office Action

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REMARKS

This paper is responsive to any paper(s) indicated above, and is responsive in any other manner indicated below.

SPECIFICATION OBJECTION/AMENDMENT

The specification has been objected to because of the Office Action concern listed within the item "1" on page 2 of the Detailed Action portion of the Office Action.

As the specification has been carefully reviewed and has been amended where appropriate in order to address each of the Office Action listed concerns, reconsideration and withdrawal of the objection to the specification are respectfully requested.

PENDING CLAIMS

Claims 1-18 were pending, under consideration and subjected to examination in the Office Action. Appropriate claims have been amended, canceled and/or added (without prejudice or disclaimer) in order to adjust a clarity and/or focus of Applicant's claimed invention. That is, such changes are unrelated to any prior art or scope adjustment and are simply refocused claims in which Applicant is present interested. At entry of this paper, Claims 1-20 will be pending for further consideration and examination in the application.

'112, 1ST PARA. "ENABLEMENT REQUIREMENT" REJECTION - TRAVERSED

Claims 12-18 have been rejected, under 35 USC '112, first paragraph, as failing to comply with the enablement requirement, for the concerns listed within the

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item 3 on page 2 of the Detailed Action portion of the Office Action. Traversal is appropriate. Further, it is respectfully submitted that the Examiner has provided minimal comments regarding the rejection.

Regarding antecedent, it is respectfully noted that claims 12-18 have been copied into the end (i.e., page 29) of Applicant's specification, in order to provide direct correspondence between the claim 12-18 claim language and antecedent language within the specification. The MPEP specifically allows the copying of claims into the specification for antecedent support.

In an attempt to rebut and/or preclude renewal of the "enablement requirement" rejection, Applicant respectfully submits the following. MPEP 2163.07(a) states with respect to the enablement requirement, that "The information contained in the disclosure of an application must be sufficient to inform those skilled in the relevant art [not the Examiner] how to both make and use the claimed invention." Further, MPEP 2106 states, "In many instances, an applicant will describe a programmed computer by outlining the significant elements of the programmed computer using a functional block diagram." It is respectfully submitted that any artisan in the map generation art would readily understand how to implement suitable computer programs from Applicant's disclosure and flowcharts, and especially Applicant's FIGS. 4, 5 and 7 flowcharts. That is, it is respectfully submitted that, as an example, Applicant's FIGS. 4, 5 and 7, delineate an example sequence of operations that a program may perform. Specific programs with respect to implementation of such flowchart arrangements are highly dependent upon the platform within which the present invention is to be implemented, but it is respectfully submitted that such specifics are easily within purview of one skilled in

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the art, without the need for undue experimentation. In short, it is respectfully submitted that Applicant's disclosure is sufficient to inform those skilled in the relevant art how to both make and use the claimed invention.

Based upon the foregoing, reconsideration and withdrawal of the above-referenced rejection are respectfully requested. If the Examiner continues such rejection, the Examiner should provide more detailed comments explaining and supporting the rejection.

REJECTION UNDER '112, 2ND PAR. OBVIATED VIA CLAIM AMENDMENT

Claim 11 has been rejected under 35 USC '112, second paragraph, as being indefinite for the concerns listed within the item "4" on page 2 of the Detailed Action portion of the Office Action. Claim 11 has been carefully reviewed and carefully amended where appropriate in order to address the Office Action listed concerns. As the foregoing is believed to have addressed all '112 second paragraph concerns, reconsideration and withdrawal of the '112 second paragraph rejection are respectfully requested.

REJECTION UNDER 35 USC '103

All 35 USC '103 rejections are respectfully traversed. However, such rejections have been rendered obsolete by the present clarifying amendments to Applicant's claims, and accordingly, traversal arguments are not appropriate at this time. However, Applicant respectfully submits the following to preclude renewal of any such rejections against Applicant's clarified claims.

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All descriptions of Applicant's disclosed and claimed invention, and all descriptions and rebuttal arguments regarding the applied prior art, as previously submitted by Applicant in any form, are repeated and incorporated hereat by reference. Further, all Office Action statements regarding the prior art rejections are respectfully traversed. As additional arguments, Applicant respectfully submits the following.

In order to properly support a §103 obviousness-type rejection, the reference not only must suggest the claimed features, but also must contain the motivation for modifying the art to arrive at an approximation of the claimed features. However, the cited art does not adequately support a §103 obviousness-type rejection because it does not, at minimum, disclose (or suggest) the following limitations of Applicant's clarified claims.

Applicant's disclosed and claimed invention is directed to map generation arrangements (e.g., devices, methods, computer-implemented programs) which improve an accuracy of map generation, while at a same time, lessens work required of a person (e.g., user) using the map generation arrangements. More particularly, the inventors found that if mapping generation was conducted purely automatically, significant errors were present in maps resultant from the automated approach. That is, as one example, in forming a map from an ariel view, an automated system cannot discriminate between a cement patio and white-rubberized roof, i.e., often the cement patio is detected as a building. The same can happen with dark rectangular parking lots.

In short, the human eye and intuitiveness has much better accuracy at recognizing building structures than purely automated systems. On the other side of

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the coin, it is too burdensome to require that a user carefully define all of the peripheral boundaries of each building. Applicant's invention provides improvement by combining user discrimination of building regions together with significant automation. More particularly, with building recognition with Applicant's invention, a user must first designate at least one position of a roof of a building. Thereafter, units (e.g., a polygon extraction unit, vector generation unit) automatically use the at least one position to detect the building region (e.g., roof outline). By using slight human intervention, accuracy is greatly increased.

Regarding the applied references, such teach either total automation approaches, or total human (i.e., manual) outlining approaches. In any event, no single reference or combination of references disclosed or suggests allowing a user to first designate (i.e., appoint) a position on a building, and then conducting detection thereafter.

In terms of distinguishing claim language, independent claim 1, for example, claims: A map generation device, comprising: an image appointment unit that receives user appointment of at least one position in a building existing within an aerial photograph to designate the at least one position as part of a building region; a polygon extraction unit that extracts pixels based on a result of discriminating a color around the at least one position, sets the extracted pixels as an extracted building region, and extracts a polygon line of the extracted building region; and a vector generation unit that generates a vector of the polygon line of the extracted building region. Other ones of Applicant's claims contain similar or analogous features/limitations. Attention is also directed to added claims 19 and 20.

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In addition to the foregoing, the following additional remarks from Applicant's foreign representative are also submitted in support of traversal of the rejection and patentability of Applicant's claims.

The feature of this invention is extracting a building based on pixel information about the one position appointed by a user in a building existing within a map (step 401). To be specific, determining a building region by discrimination as to whether or not the value of a pixel around the appointed position is within a predetermined threshold range, and discriminating a pixel around the region that has been determined to be currently determined building region. By thus expanding the building region, boundary lines are determined finally (refer to page 14 line 15; page 15 line 18; and FIG. 8).

In this invention, not all processes are executed by a computer, but appointment of at least one position to which reference is made for building recognition is received from a user and the position appointed is used for the processes. This architecture makes it possible to reduce the load of the user rather than in the case where all the processes are manually executed. And this architecture makes it possible to increase in recognition accuracy rather than in the case where all the processes are automatically executed by a computer (page 3 line 13 to 20).

The cited documents presupposes "digital terrain model (DTM)" ground height data and "digital surface model (DSM)" building height data (refer to section 3.2 to 3.3 of the document A and section 2.2 to 2.3 of the document B). In the cited document, the height data is basically used to extract an area having a predetermined height (two meter to five meter range above ground) as a building

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existing area "blob" (refer to section 4.3 line 1 to 3 of the document A). In addition, focusing on the existence of G and R is performed (refer to section 4.1 of the document A and section 3.3 of the document B), for separation of artificial object from vegetation. And K-means classification with a red (R)-channel and a brightness (Lt)-channel is used to extract a building (refer to section 5.1 of the document A and section 3.3 of the document). Then, edges thereof are extracted.

In other words, in the cited documents, applied to a whole image are: <1> providing the height data in advance; and <2> the K-means classification (a technique for classification by similarity, in which a plurality of clusters are set in advance, target pixels are each allocated to the closest cluster, a center is recalculated for each cluster to which the pixels are allocated, and the allocation and the recalculation of the center are repeated until a convergence is obtained). Accordingly, the whole target area is divided into a plurality of classes (refer to Fig. 7 of the document A) to thereby determine a building area.

Therefore, neither of the cited documents discloses the requirement to "receive(s) appointment of at least one position in a building". Further, neither of the cited documents discloses the technique of this invention for setting an "appointment position as a "building region" and discriminating a color of a pixel around the building region to thereby expand the building region toward the vicinities (i.e., perimeters).

Although cited document A discloses "start pixel" in line 3 of last paragraph of left column of section 5.1, it should be noted that there is no disclosure of the one position appointed by a user according to this invention. In this case, the K-means

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classification is merely used to extract an area classified as having the same class, so the start pixel is merely a position that is focused on at the start of a process.

As a result of all of the foregoing, it is respectfully submitted that the applied art (taken alone and in the Office Action combinations) would not support a '103 obviousness-type rejection of Applicant's claims. Accordingly, reconsideration and withdrawal of such '103 rejection, and express written allowance of all of the '103 rejected claims, are respectfully requested.

EXAMINER INVITED TO TELEPHONE

The Examiner is herein invited to telephone the undersigned attorneys at the local Washington, D.C. area telephone number of 703/312-6600 for discussing any Examiner's Amendments or other suggested actions for accelerating prosecution and moving the present application to allowance.

RESERVATION OF RIGHTS

It is respectfully submitted that any and all claim amendments and/or cancellations submitted within this paper and throughout prosecution of the present application are without prejudice or disclaimer. That is, any above statements, or any present amendment or cancellation of claims (all made without prejudice or disclaimer), should not be taken as an indication or admission that any objection/rejection was valid, or as a disclaimer of any scope or subject matter. Applicant respectfully reserves all rights to file subsequent related application(s) (including reissue applications) directed to any/all previously claimed limitations/features which have been subsequently amended or cancelled, or to

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any/all limitations/features not yet claimed, i.e., Applicant continues (indefinitely) to maintain no intention or desire to dedicate or surrender any limitations/features of subject matter of the present application to the public.

CONCLUSION

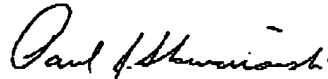
In view of the foregoing amendments and remarks, Applicant respectfully submits that the claims listed above as presently being under consideration in the application are now in condition for allowance.

To the extent necessary, Applicant petitions for an extension of time under 37 CFR 1.136. Authorization is herein given to charge any shortage in the fees, including extension of time fees and excess claim fees, to Deposit Account No. 01-2135 (Case No. 1213.43404X00) and please credit any excess fees to such deposit account.

Based upon all of the foregoing, allowance of all presently-pending claims is respectfully requested.

Respectfully submitted,

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